This particular device has not yet reached a prototype and testing stage. The estimated price of the device will be 3000 – 5000 euro. The material costs per unit are estimated to be 2000 euro. ■

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Does Cedomon work?

Biological seed dressing solution Cedomon® is commonly used, especially in Sweden. Cedomon is accepted in organic farming in many countries. In Sweden a big amount of conventionally cultivated cereal is also dressed with Cedomon. In Finland benefits of Cedomon has been variable.

Cedomon is a natural preparation. The active ingredient is a common soil bacteria *Pseudomonas chlororaphis*. In addition rape oil is used as carrier component. Cedomon is not risky to humans, animals or the environment and it is biodegradable. These are the great benefits.

The seed dressing products has usually effect only on seedborne or soilborne plant diseases. They cannot prevent diseases, which come through air. The manufacturer of Cedomon claims that the product has effect on barley net blotch (*Drechslera teres*), barley leaf stripe (*Drechslera graminae*) and fusarium. The plant diseases can remarkably decrease yields of barley and wheat, but normally not much the yields of oat and rye. The manufacturer claims that Cedomon can increase the yields of barley 3–5 % under northern European conditions.

Experiments in Finland

In 2003 there was an experiment in Agrifood Research Finland (Vihti), which compared Cedomon, Baytan®, wood smoke treatment and no-treatment. Barley (Saana) and oat (Roope) were chosen to the experiment. The experiment (4 replications) was set up in a conventionally cultivated field using chemical fertilisation. The seed dressing treatments were conducted in a concrete mixer. Wood smoke treatment was done in a specially designed grain dryer.

The seed dressing treatments did not raise the yields of oat compared to untreated. Wood smoke treatment slightly decreased the yield. Probably the oat seed did not have seed- or soilborne diseases in 2003. In 2002 Baytan treatment increased the yield of oat about 1000 kg/ha. In that year Cedomon was absent. For example oat loose smut (*Ustilago avenae*) and leaf spot (*Drechslera avenae*) are diseases of oat, but fortunately they decrease yield of oat quite seldom. Cedomon is claimed to be effective against oat leaf spot, but not against loose smut. Chemical Baytan has broader effect to different diseases.

In 2003 Baytan had a tendency to increase yield of barley compared to untreated (not statistically significant difference). Cedomon did not increase the barley yield. Wood smoke treatment slightly decreased the yield. The treatments had very little effect on quality of barley or oat.

Probably barley seed neither had any diseases in 2003, which could be controlled by Cedomon.

Profitability of biological seed dressing

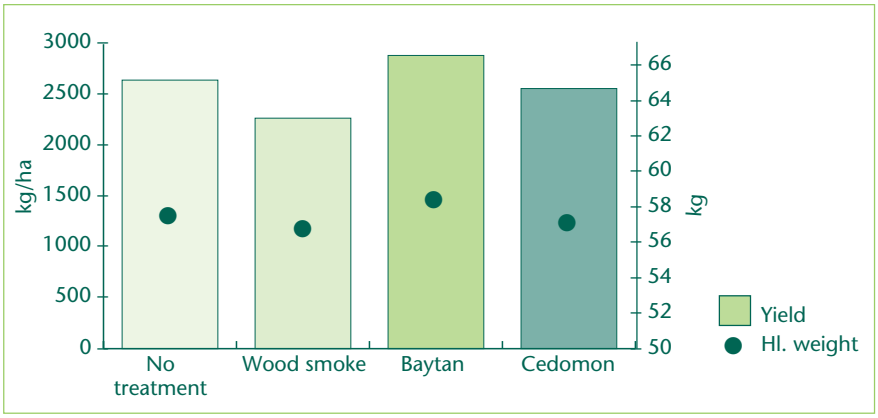
Agrifood Research Finland (Jokioinen) has done experiments, where Cedomon has controlled barley net blotch nearly as well as chemical products. Cedomon has increased barley yield 200–300 kg/ha, if there has been plenty of net blotch. Cedomon has decreased barley leaf stripe 40 – 80 %, when chemical products have given nearly 100 % effect. The effect of Cedomon against leaf stripe has not usually been enough to increase the yield, but the quality can become better.

According to these experiments, it seems that Cedomon has no effect against loose smut of barley (*Ustilago nuda*) or fusariums.

A conclusion of the results is that the farmer should know which diseases are present in his seeds, before he can decide if it is sensible to use Cedomon. For example barley net blotch and loose smut can be observed from previous year crop. Seed disease laboratories can give the best evaluation of seedborne diseases.

In Finland the price of Cedomon is about 4,6 euros/100 kg seed (incl. 22 % tax). In addition, the dressing work costs must be taken into consideration. In Finland many seed companies sell Cedomon treated seeds.

Cedomon is like an insurance, which is sensible to take when the crop is barley. The product has no effect against all seedborne diseases of barley, so it does not always improve yield or quality. Cedomon does not seem to be very essential if the crop is oat. ■



Effect of seed dressing treatments on barley yield and hectolitre weight in 2003 in Agrifood Research Finland (Vihti).

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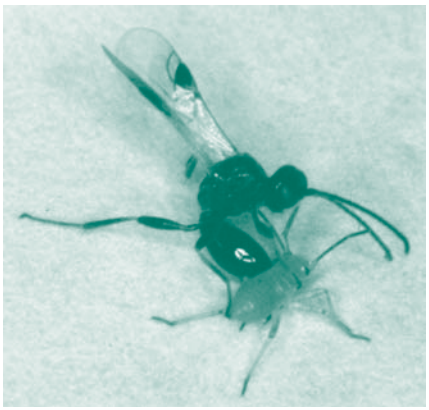
Ängsstinkflynas fiender – var är de, när finns de och hur kan de gynnas?

Phasia obesa. Foto: P. Buchland

Ludet ängsstinkfly *(Lygus rugulipennis)* är den mest dominerande skadegörande insekten på grödor i Sverige. Den är generalist och angriper ett stort antal olika grödor. För att utveckla biologiska kontrollstrategier mot ludet ängsstinkfly och andra *Lygus*-arter behövs mer kunskap om hur de påverkas av naturliga fiender.



Parasitstekel av släktet Persistenus angriper en Lygus-nymf. Foto: C. Picket.

För att undersöka förekomsten av arter som parasiterar på *Lygus* har en studie genomförts i olika grödor i mellersta (Uppsala) och norra (Umeå) Sverige.

Parasiten *Phasia obesa* fanns på övervintrande vuxna *Lygus* på nästan varje fält i båda undersökningsområdena. Nymfer av *Lygus*-arter som samlats in i Umeå var parasiterade av *Peristenus pallipes* och i Uppsala av *P. relictus, P. pallipes* och *P. varisæ*.

I vårraps var parasiteringsgraden hög, vilket kan bero på att raps fungerar som födoresurs för parasiterna. Detta uppmuntrar till vidare undersökningar om hur man i åkermark och intillliggande områden kan utveckla livsmiljöer som gynnar de naturliga fiendernas överlevnad och reproduktion.

Projektet har finansierats av Forskningsrådet för miljö, areella näringar och samhällsbyggande (Formas). ■

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